

We proposed a project that infused high school STEM curricula with cross-cutting topics related to the hot research areas that scientists are working on today. We began by focusing on sustainable energy concepts and then shifted to nanoscience and technology.

This presentation reports on the iterative development of a model for infusing grand challenge research topics into high school STEM curricula. Development involved replicating the model design in a dissimilar research area. Replication provided greater insights into the model's mechanisms. **Research Goes to School** integrated cutting edge research activities and STEM education practice at the pre-college level, utilizing STEM teachers.

Results provided a framework for creating professional development with researchers and STEM teachers that culminates with integration of grand challenge concepts and education curricula.

Using Design-based Research over a multi-year process, core practices to an effective program began emerging. To evaluate the core practices found in the biofuels topic from years 1-3, we used a dissimilar topic, nanotechnology, in years 4-5. We saw a greater integration of research and education activities in teachers' curricula as the core practices became more fully developed.

Creating effective STEM education that has meaning and relevance by directly linking to grand challenge issues is critical for moving today's youth into STEM careers. This poster reports on the development of a model designed to connect high level research with K-12 STEM curricula: the iterative process of development, the evaluation in a dissimilar research area, and lessons learned.